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LOCAAS test uses satellite data to identify target

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EGLIN AIR FORCE BASE, Fla. — The Air Force Research Laboratory, in partnership with Lockheed Martin, conducted an operator-in-the-loop flight test of the LOCAAS™, a low-cost autonomous attack system at Eglin Air Force Base on Oct. 21. LOCAAS is an autonomous, wide-area search miniature munition that is equipped with a scanning Laser Detection And Ranging (LADAR) seeker.

"This test demonstrated capability to integrate automatic target vehicle identification with a two-way satellite data link, allowing operator-in-the-loop redirection of the LOCAAS to engage a desired target," said Jack Cocchiarella, AFRL's Munitions Directorate program manager.

The LOCAAS flight test vehicle was launched from a King Air 200 and flew more than 40 nautical miles in approximately 15 minutes. During the flight, LOCAAS was powered by a Technical Directions Incorporated J45G turbojet engine as it used its LADAR seeker to search, identify and report on targets in a designated mission search area.

An Air Force flight-rated operator, serving as the operator-in-the-loop, retargeted the LOCAAS flight test vehicle (FTV) to attack a pop-up moving time-sensitive target elsewhere on the range. Once redirected, the test vehicle calculated and flew an optimal intercept path to the location of the desired target of interest. The operator interface was a ruggedized laptop computer with a modified version of the Air Force's Portable Flight Planning System FalconView map overlay software. This software enabled the operator to monitor and redirect the LOCAAS FTV as desired and continuously relayed relevant moving target track information received from an external source to support the engagement. Although not used in the flight test, the operator could also have commanded an abort of the attack at any time up to engagement.

Globalstar SATCOM was used to link the LOCAAS FTV to the operator-in-the-loop interface and the external targeting source. Network Centric Collaborative Targeting fused track and identification information from several simulated Intelligence, Surveillance, Reconnaissance (ISR) sensor platforms to provide a refined composite track of the moving pop-up time-sensitive target. The NCCT link also allowed the LOCAAS FTV to act as a non-traditional ISR sensor input to NCCT. The LOCAAS detected three stationary target vehicles and transmitted high-confidence position and identification information to NCCT, to be fused into composite tracks for use by other operational systems. During the flight, the operator monitored real-time FTV weapon state information and near-real time location updates of all NCCT-tracked targets.

The operator interface was also linked to a Cooperative Attack Munitions Real-time Assessment testbed, which simulated three computer-generated "virtual" munitions cooperatively searching an area adjacent to the FTV. Once cued by the operator-in-the-loop, the virtual munitions performed a coordinated attack of the three stationary targets. **@**